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# The effects of phonlogical awareness on second language acquisition

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# THE EFFECTS OF PHONOLOGICAL AWARENESS

# ON

# SECOND LANGUAGE ACQUISITION

**A Thesis**

**Presented to**

**The Faculty of the Department of Education**

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**of the Requirements for the Degree**

**Master of Arts**

**By**

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## ABSTRACT

## THE EFFECTS OF PHONOLOGICAL AWARENESS ON SECOND LANGUAGE ACQUISITION

**by Ruth E. Finsthwait**

Linguistically diverse student populations are prevalent in today's schools. Educators are required to teach students with a wide range of English proficiencies and language backgrounds. In light of this situation, the importance of understanding the process of second language acquisition is crucial to the ability of determining when a child is progressing successfully. Substantial time is needed to develop an academic level of English. But how do educators determine if a learning disability is hindering the process and which specific deficits impact second language learning?

The purpose of this study was to look at the personal journeys of bilingual subjects and examine the effects of phonological processing on their acquisition of second language learning. The findings of this research support that deficits in phonological awareness and processing impact literacy skills in the first and second languages. The strongest indicator of the presence of phonological processing difficulty was found in the writing domain.

## Acknowledgements

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Lastly, I would like to sincerely thank my husband, David, for his perseverance with me through the conception and completion of my thesis and for his loving support of pursuing this personal goal of mine.

# Dedication

I would like to dedicate my research and findings to all educators trying their best to meet the demands of teaching in a diverse population of students, and to the students who are in the very difficult process of learning a second language, English, while trying to meet the growing demands of the academic content.

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# Chapter One: Introduction

## Background

Continued migration to the United States from all corners of the world fill the classrooms with children representing numerous cultural and linguistic backgrounds. A large percentage of these students have no previous exposure to English or even to school, while others have varying levels of proficiency of the English language. The term English language learner (ELL) is used to designate those students who are unable to follow the regular curriculum in English without some specific instructional support. Language minority students move along a continuum of language acquisition. Two levels of proficiency have been described on this continuum, which need to be differentiated. Certain children adapt quickly and acquire conversational English at the BICS level, Basic Academic Language Communication Skills (Cummins, 1981, 1984). This level of conversational proficiency is often attained in approximately two years of exposure to English. Naturally, two years is the mean proportion. Individual differences in language learning and an individual's language background affect this process of acquisition. When students are able to use the language for reading and writing of abstract concepts, they have developed another level of language proficiency referred to as CALP, Cognitive Academic Language Proficiency (Cummins, 1981, 1984). Five to seven years of exposure and learning are usually necessary for a student to reach this level of language proficiency. However, not all children transition easily into English. Some labor for long periods of time, unsuccessful in developing their English language skills. Thus, several questions arise: What is preventing the child from developing and

acquiring the necessary skills in a new language? Why do some children appear to have an aptitude for acquiring and learning English while others struggle to develop the most basic level of proficiency, BICS? Will this exclude language minority students from further progress to the academic CALP level necessary for meeting the demands of middle and upper elementary grades?

Many years of study have been dedicated to analyzing the discrepancy in performance and development of English-speaking students' in all the academic domains. Research has shown that specific learning disabilities prevent children from progressing as expected in their related academic domains (Ganschow & Sparks, 1991; Moats & Lyon, 1996; Shaywitz, 1998; Sparks & Ganschow 1991, 1993a, 1993b; Ganschow, Sparks & Javorsky, 1998). An example of this achievement versus potential discrepancy is found in Vellutino & Scanlon's study (1986) of a group of children who had strengths in "linguistic coding" which allowed them to develop reading skills effortlessly. This group was compared to students who failed to progress and develop the phonological skills necessary for reading fluency, becoming poor readers. These children were labeled with a reading disorder. This correlation between processing difficulties and deficits in performance provides a window into the **cause** of low achievement and/or lack of progress.

Diagnosing a learning disability in monolingual students is often difficult. Diagnosis of learning disorders become a particular challenge when English is the student's second language. One of the greatest challenges faced by special educators is the ability to effectively diagnose learning disabilities in the linguistically diverse populations

presently attending today's schools. The dilemma of correctly diagnosing a learning disability in an ELL student is twofold. The first aspect of the dilemma relates to the access and availability of assessment tools in the student's native language as well as adequate preparation of assessment personnel (Ganschow et al., 1998; Langdon, 1996; Service, 1992)

The second component of the dilemma is establishing a causal relationship between the specific learning disabilities that prevent children from acquiring and learning English, or for purposes of generalization, any second language. Past research has suggested that a language disorder in one's first language has negatively impacted the acquisition of another language (Ganshow et al, 1998; Sparks & Ganshow, 1993a; Langdon, 1992). However, there has been limited research in establishing which specific linguistic components enhance or hinder the progress of second language acquisition.

The research related to this study primarily focuses on foreign language learning and learning disabilities. Recent research has indicated that the ability to process phonemes, referred to as phonological processing, impacts the reading development of children (Shaywitz, 1998). Aspects of receiving, manipulating and organizing the phonemes of written and spoken language are the fundamental building blocks to reading and writing. Deficits in the phonological processing and storing, including aspects of memory, seem to be related to both success in learning to read and learning a foreign language (Service, 1992, Sparks & Ganschow, 1993a). At this point, it is imperative that the linguistic and special education fields converge to continue analyzing the impact of

specific learning disabilities on the acquisition and learning of English, as a second language.

**Statement of the problem**

Currently, public schools are inundated with English Language Learners (ELL). Apparent are the differences in the rate at which these students learn to develop proficient language skills to learn abstract concepts and meet their academic demands. Schools across the country have run into the dilemma of how to assess transitional bilingual children for difficulties with learning. The majority of educational tools to assess learning disabilities are published in English, causing the test results to be invalid and unable to assess achievement potential due to the student's lack of proficient skills in communicating their knowledge in a second language, or specifically English. This leaves educators ill prepared to meet the challenges of authentic assessment of children who are transitioning from their native language to English. There appears to be two responses to children who are not progressing in English. First, when educators are faced with a child who does not participate for lack of communication due to undeveloped second language skills, they might assume the presence of learning difficulties and refer the child to special education. In this response, children who need time to build the appropriate level of language skills and vocabulary in English, which according to Cummins (1989) can take five to seven years, are not given this time. Often they are transferred to a special day class and put in a restrictive environment, violating the Education for All Handicapped Children Act, PL94-142, the law that all students be placed in the Least Restrictive Environment (Gartner & Lispsky, 1987). The other

prevailing response tends to swing to the other side of the pendulum; more time is needed to develop language skills. This, potentially, can keep a child who has special learning needs from being serviced, leaving the student to swim through a sea of confusion with little or no demonstration of progress. The lack of careful examination for the potential root of the child's inability to progress in the second language is the primary cause for allocation of inadequate and inappropriate services for the ELL students in today's schools.

Many children, who fail to acquire English as a second language, demonstrate symptoms of learning difficulties in their native language (Ganschow, Sparks, Javorsky, Patton, & Pohlman, 1992; Carroll, 1990, 1973; Remuth & Smith , 1987, as cited in Sparks & Ganschow, 1993a). In light of what research purports, a further investigation of self-reported difficulties which may have occurred in the course of their native language development, and further struggles the subjects experienced in acquiring and learning English will be carried out.

**Purpose of the Study**

The purpose of this study was to take a close look at the learning and acquisition of English, as a second language, by twenty-six individuals. There is emergent literature which considers this very important issue of how individual learning strengths and weaknesses effect this process. The individual learning profile, which was self-reported, was analyzed along with the personal account of the impact of their learning journey.

The intent of this study was to review the research pertaining to foreign language learning and learning disabilities, and collect the real-life journeys of bilingual

individuals to understand the causal relationship between one's learning profile and the ability to acquire and/or learn English. The purpose of this research was to assist educators in becoming more aware of how specific learning disabilities affect the learning process, and how this impacts the individual's acquisition and learning of English.

**Research questions**

1. The young adults who score poorly on the phonological awareness test will report proportionally lower proficiencies in reading, both in their native language as well as English.
2. The young adults who score poorly on the phonological awareness test will report proportionally lower proficiencies in writing, both in their native language as well as English.
3. Proportionally lower proficiencies in the first language and in English will be reported in the active academic domains of reading and writing than the conversational skills of listening and speaking by those identified to have reduced phonemic awareness by the phonological awareness test.

**Limitations**

Specific restrictions and limitations present in this study include:

- Efficacy of the survey and interview depend on the honesty and the ability of the subject to express his/her experience and assess his/her proficiencies.
- Self perceived notions of language and school activity proficiency levels could differ.

**Definitions of terms**

Auditory processing – a child's ability to attend to, decode, comprehend, store, manipulate, and apply auditory information effectively.

BICS/CALPS- two levels of language proficiency developed by Cummins (1981, 1984)

BICS- the first level of proficiency developed, pertaining to a contextualized, conversational level. (Basic Academic Language Communication Skills)

CALP- the next level on a continuum of growing proficiency demonstrating reading and writing abilities, and understanding of academic and abstract concepts. (Cognitive Academic Language Proficiency)

Code Switching – the switching back and forth between two languages due to lack of language knowledge when expressing oneself.

Difference between L2 Acquisition and L2 Learning - "A further distinction between L2 acquisition and L2 learning is made. The former is implicit and subconscious; the latter results in the ' . . . conscious representations of linguistic generalizations, a meta-awareness of the language'." (Krashen, 1981, p155).

English Language Learner (ELL) – a student in the process of acquiring English, having a different native or first language.

Language Skills- the ability to comprehend, organize, and produce a spoken and written language.

Language Acquisition-the exposure to a language that enhances learning as an individual grows to organize and make sense of their surroundings.

Language Learning-the study of a language with the intent to build language skills to converse, to communicate, to read, to write and to understand.

Native Language vs. Primary Language – an individual's dominant language versus the first language he/she learned in his/her initial linguistic exposure.

Phonemic awareness – the understanding that spoken words and syllables are composed of a specific sequence of individual speech sounds.

Phonological processing – the ability to utilize, manipulate and apply the sound-symbol correspondence.

## Assumptions

The researcher assumed the following:

1. The subject will endeavor to honestly answer the questionnaire and the interview to the best of their ability.
2. The phonological awareness test results will be indicative of the subjects' level of phonemic awareness in English.

## Importance of the study

The importance of this study lies in the education of the ever-increasing population of students in today's schools who are culturally and linguistically diverse. A dilemma occurs when the transitional bilingual student is struggling academically, and is failing to progress in English. The academic field needs to take a closer look at the cause for this child's lack of successful acquisition of English and development of language skills. Research has delineated specific processing domains that hinder the acquisition of language, phonological, and auditory processing. The intent of the study was to gain

insight into the particular areas of difficulty that a student might experience in developing and acquiring a second language, indicative of the manifestation of deficits in specific processing domains, based on the individual experiences of twenty-six bilingual subjects.

# Chapter Two: The Review of the Literature

## Introduction

The increasing population of linguistically diverse students in the United States influences research efforts which attempt to define successful strategies to instruct English language learners, and to design adequate diagnostic tools used to assess these students. The linguistic components of second language acquisition need to be addressed to understand how to best educate the growing population of diverse students. How do educators assess learning disorders, and which disorders effect the acquisition of English preventing school success and a student from reaching the adequate level of academic proficiency, referred to by Cummins (1984) as CALP, Cognitive Academic Language Proficiency? In their analysis of student performance in foreign language classes, the following researchers found connections between first and second language learning characteristics of learning disabled students and other at-risk students. (Ganschow & Sparks, 1991; Ganschow et al., 1998; Sparks & Ganschow 1993a; Sparks, Ganschow, & Pohlman, 1989).

The first step in determining the causal relationship between learning disabilities and second language acquisition needs to be followed by careful consideration of how to diagnose a learning disability in the bilingual child who is transitioning to English. Landgon states, "because language performance is so intimately linked to academic success, the question of differentiating a language disorder from a bilingual, cross-cultural difference in a student with limited English proficiency is a crucial one for all specialists involved. A language disorder which is manifested in the primary language,

will also be reflected in the second language." (1989, p. 160). Therefore, consideration of the individual's native language and analysis of its development is crucial. However, caution is in order even when the connection between first and second language learning is made. Premature diagnosis of learning deficits when, in fact, children need more time to develop their language skills can be extremely detrimental. For this reason, the importance of assessing children in both languages must be stressed (Langdon, 1989). Cummins (1989) heeds a warning to educators to evaluate a child's second language abilities. A child may apparently have adequate conversational English skills but have difficulty comprehending and articulating abstract higher-order thinking in English. This basic level of conversational skills is referred to as BICS, or Basic Interpersonal Communication Skills (Cummins, 1984). A student's BICS proficiency can lead educators and psychologists to eliminate 'limited English proficiency' as an explanation for academic difficulty, resulting in the student's low academic performance being attributed to deficient cognitive abilities (e.g. learning disabilities, educable mental retardation) or to lack of motivation to succeed academically (Cummins, 1989). In light of the varying levels of language proficiency and the connection between first and second language learning disorders, research suggests that a clinician needs to consider linguistic components in both languages, as well as, thoroughly check the student's developmental background.

## Connection between First and Second Language Disabilities

First, the connection between native and second language learning must be established before the application and assumption that other domains of research (for example, research on dyslexia) are relevant and germane to second language learning.

Ganschow & Sparks (1991) found that students' native language skills appear to affect their ability to meet the demands of learning a FL (foreign language) in traditional classrooms at both secondary and post-secondary levels when they have been diagnosed with a learning disability. Oral and written language based difficulties are reflected primarily in the phonological and syntactic components of language. The results of their study provide additional evidence to support the hypothesis that native language learning problems may cause FL learning problems (Ganschow, Sparks, Javorsky, et al. 1992). The previous findings reinforce the connection which exists between first and second language difficulties. They also outline specific deficits which negatively impact second language acquisition.

The specific native language learning disabilities impacting successful second language learning are related to linguistic skills which include phonological processing and auditory memory. "There emerged a pattern which suggests that a specific learning problem in phonological processing has an immediate and significant impact upon a student's ability to manage the study of a foreign language." (Sparks, et al., 1989, p.187). Results of research indicate that the most common deficits occur at the phonological and rote memory levels (Ganschow & Sparks, 1991). These findings mirror deficits found in

research related to reading disabilities and second language (or foreign language) learning, and delineate a new area of research which must be addressed.

**Reading to Language Learning Connection**

Many connections have emerged in the current research between dyslexia and deficits in phonological processing. The ability to process phonemes and manipulate them is fundamental to the learning of a second language. Moats and Lyon (1996) discuss this connection between reading and language. It appears that,

> most reading and spelling disabilities originate with a specific impairment of language processing, not with general visual perceptual deficits, inability to construct meaning from context, or other more general problems with attention or memory. Dyslexic students, those identified as having learning disabilities are unable to process efficiently and accurately the phonological building blocks of language and the units of print that represent them (Moats & Lyon, 1996, p.74).

Sparks and Ganschow (1991, 1993a,1993b) also realized the connection of the cognitive functions and linguistic components shared during the process of learning to read as well as learning a language. They published numerous articles describing the characteristics of high-risk and low-risk language learners, using a screening instrument they constructed to assess second language learning aptitude. They also concluded that the difficulty faced by students with reading disabilities, such as dyslexia, were similar to those difficulties challenging students identified as at-risk foreign language learners. Difficulties manipulating, retaining and reproducing phonemes rudimentary to reading, are equally necessary for the development of effective language learning skills. Similarly, Shankweiler (1989) indicates that reading difficulties at both the word (decoding) and sentence (comprehension) levels stem from deficits in phonological processing and working memory.

These components of processing sound, holding auditory information and recalling it upon demand are mandatory skills to develop the rhythm, awareness and ability to utilize language (Ganschow, Sparks, Javorsky, et al., 1992).

**Auditory Memory**

Success in learning a second language depends on the ability to retain auditory information. Recalling vocabulary heard and reproducing foreign sounds of a new language are instrumental in developing second language abilities. Fillmore (1992) indicates that exposure to the target language and the ability to remember, access, and structure the auditory information determine individual differences in language learning ability. Furthermore, Service (1992), purports that effective phonological processing and accuracy of storing the phonological representations of language heard in immediate memory are crucial to successful language learning: "working memory is an information-processing stage that contains representations necessary for the long-term learning of a language, and hypothesized that the accuracy of these representations in terms of phonological features will affect language learning." (p.25). The interrelationship between auditory memory and phonological processing is imperative for the successful learning of a second language and the acquisition of comprehension skills. Ganschow, et al. (1998), found that language learning success depended on "the Language/Memory and Phonological Recoding factors accounted for the largest part of the variance in FL (foreign language) proficiency and only these two factors contributed significantly to the variance in overall FL proficiency" (p.252). Therefore, storing the linguistic components mentioned above is vital for expanding new

vocabulary, understanding the structure of a new language and accessing this information when necessary.

## Auditory Processing to Language Learning Connection

"Evidence from the foreign language aptitude research seems to indicate that poor 'auditory ability' or 'phonetic coding' has the potential to cause foreign language learning problems, just as deficits in phonological coding – the ability to take apart and put together the sounds and their representative letters in words – can cause problems in learning to read and write one's native language." (Ganschow & Sparks, 1991, p.385). The effectiveness of processing auditory information impacts both native language domains of reading and writing as well as second language learning. In the research mentioned above, 'auditory ability', referred to as auditory processing, was identified as one of the deficit area for struggling language learners. The study found that students who were experiencing significantly less success in a foreign language course compared to their other subjects had problems with 'auditory ability', specifically, sound-symbol and sound discrimination tasks. This auditory processing component was found to be the determiner between successful and effective language acquisition and those who experienced great difficulty going through the process. (Ganschow & Sparks, 1991). Research has further specified how auditory and phonological processing skills impact the coding of the sounds to organize, retain, and recall new sounds and vocabulary during the language learning process.

## Linguistic Coding

There is a connection between oral and written language. The processing employed during the acquisition of language is also required in learning to read. In converging these

two domains, Vellutino, & Scanlon (1986) purport that "if poor readers have difficulty in processing spoken words and if such difficulty is due, in significant measure, to deficiencies in storing and retrieving the linguistic components of these stimuli, the readers would quite likely have difficulty in explicating the internal structures of printed words and thus in learning to decode them." (p.128). The linguistic component can hinder or accelerate the development and utilization of sounds to relay meaning and to communicate. However, the relationship between memory and phonological processing plays a vital role in the success or failure of student's development of language and reading skills.

Vellutino and Scanlon (1986), have further defined this process as "linguistic coding" which refers to the use of coding language or symbolizing information. More specifically, it refers to "the functional use of the semantic, syntactic, and phonologic attributes of given units of language in storing and retrieving both the information encoded in those units and the units themselves." ( p.116). Without the ability to effectively process the units of sound, the phonemes, and recall them upon demand, as covered in the previous section, language learning is arduous and overwhelming for the students with these deficits.

Further evidence of deficits in the linguistic coding affecting the ability to read and process language is supported by Sparks and Ganschow's (1993b) findings.

> In addition, poor readers make significantly more speech production errors than good readers and display verbal naming difficulties (Catts, 1986). This evidence shows that poor readers, most of whom have phonological deficits, also have difficulty with speech perception and production, and that earlier oral language difficulties have the potential to affect reading. (p.294)

The junction of the development of speech production and auditory memory (as assessed by verbal naming) are claimed to be precursors to the onset of potential reading

difficulties, which further imply the onset of deficits in second language learning. Sparks and Ganschow (1993b), further indicate that this established connection explains the reason students are experiencing difficulties in foreign language classes.

> Thus we infer that the inefficiently functioning phonetic module which causes overt or subtle difficulties with the oral and written aspects of one's native language is also responsible for the listening and speaking problems in a FL, and we extend our hypothesis to include FL reading and writing as well. If there are even subtle linguistic coding deficits in one's first language system, it is reasonable to expect a second language system to suffer from similar deficits. ( p.295).

**Phonological Awareness Connection to Foreign Language Learning**

Another set of research has tied differences in linguistic coding to second language acquisition aptitude (or in this research is referred to as foreign language learning). Specifically, Ganschow, et al. (1998), studied the effects of the manipulation and recall of phonemes and its impact on various language components to include: phonological/orthographic, syntactic, and semantic—which they define as the basic foundation for FL learning. Their previous research led them to the hypothesis called the "Linguistic Coding Differences Hypothesis (LCDH)" which states that the native language skills do influence the acquisition of a foreign language, playing a significant role (Sparks & Ganschow, 1991; Sparks, et al., 1989).

Ganschow, Sparks, Patton, Pohlman & Javorsky (1992) compared test scores related to language learning of high school students in foreign language classes. They noted that, "language learning problems are thought to occur primarily in the phonological and syntactic but not semantic components of language, and are accompanied by short-term memory problems for verbal material." ( p.409) They indicated that a number of learning disabilities

go undetected in the primary language because students are able to compensate with various modes of comprehension and familiarity with their native language structure and meaning. Learning a new language destroys these compensatory schemas as the student struggles to make sense out of new sounds and a new language structure. At this point, weaknesses in phonological awareness and verbal memory can not be concealed. Sparks and Ganschow (1991) state that,

> Recent research indicates that reading disabled children have limited awareness and sensitivity to the speech-sound structure of the language. They also have word-finding and naming problems and poor verbal short-term memory . . .. Implications from this research are that poor readers need a higher quality of signal than do good readers for error-free performance in speech (which is not the case for nonspeech sounds in the environment) and that poor readers have deficits which are specific to difficulties with the phonological structure of words (p.8-9).

These difficulties can be so extremely overwhelming and anxiety producing to the LD student that they become unable to progress and ultimately drop out of school. In the same study previously cited, Sparks and Ganschow (1991), found a correlation between foreign language class drop out rates and test profiles which revealed weaknesses in the phonological, syntactic, and semantic aspects of language. The majority of students in their research study primarily had problems in phonological coding. The impact of the problem in this area was such that these students dropped out or failed in the first or second semester of their foreign language class. Once again, a clear correlation between reading, writing, and language with phonological awareness is confirmed. "Phonological awareness and phoneme segmentation not only play a part in the acquisition of written language, but also in the development of oral language" (Sparks & Ganschow, 1991, p.8).

## Affective Qualities of Language Learning

Individual effort, emotions such as anxiety in language learning, linguistic aptitude as well as motivation are all factors which influence the successful learning of English as a second language. These factors have been considered in the literature of second language acquisition.

Concerns have surfaced regarding the social-emotional aspect of second language learning. The following research has considered variables such as anxiety, motivation and attitude as they might impact language learning. While social-emotional factors might influence students success in learning a second language, studies conducted with immigrant populations show that attitudes do not necessarily predict English language learning proficiency (August & Hakuta, 1998; Hakuta & D'Andrea, 1992).

Contrary to the distinction that Hakuta and August (1998) make between the immigrant population and language majority students taking a foreign language class, additional research has suggested that negative affective qualities do not prevent acquisition, but are caused by preexisting linguistic difficulties (Sparks, 1995; Sparks & Ganschow, 1991, 1993b, 1995). To explain this casual relationship, these researchers report that affective differences (i.e., motivation, attitude, anxiety) are in reality the result rather than the cause of FL learning problems, and that language aptitude differences account for differences in FL learning. The theory that the linguistic components cause negative affects stems from their view that, "subtle or overt difficulties in an individual's understanding of or inability to use the language codes are the likely cause of FL learning difficulties, whereas affective

differences are a likely consequence of these language learning difficulties." (Sparks & Ganschow, 1991, p.4)

During the process of second language acquisition, students are required to return to a situation of learning to talk, read and write in another linguistic code. For children who struggle due to language learning difficulties, educators are asking students to return to a difficult process that is arduous and anxiety producing. "It is, therefore, conceivable that other factors, such as difficulties with one or more aspects of one's native language, may contribute to poor performance in FL (foreign language) classes and that undue anxiety may result from native language learning problems. The affective qualities, then may only be symptoms – behavioral manifestations – of a deeper problem." (Sparks, & Ganschow, 1991, p.6).

Research covered in this review has focused on the connection between first and second language disorders, specific learning difficulties that impact the acquisition of a second language, and the affective qualities that arise for the student's experience of struggling with differences in language aptitude. This background information can now be applied to the authentic diagnosis of a language learning difficulty.

**Diagnosis of Language Learning Problems**

The law mandates that educators service all children that have been diagnosed with a learning disorder, which is defined as "Public Law 94—142 stating ' . . . a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations' (US Office of Education, 1997, p. 65083,

as cited in Salvia & Ysseldyke, 1998). The following research gives educators and clinicians recommended methods for assessing the bilingual, transitional child.

Ganschow, et al. (1998) list four components which should be considered in an effective assessment of bilingual students, "a) a review of the student's development history; b) a review of his or her academic (native language) learning history; c) a review of the student's FL learning history; and d) administration of standardized measures of native language skill (i.e. reading, phonological/orthographic processing, grammar, spelling, writing, vocabulary, oral language: and FL aptitude." (p.253). Thus, the analysis of a child's native and secondary language skills can prevent misdiagnosis of learning disabilities, overestimating language proficiency, providing the opportunity to accurately assess the student's cognitive functioning.

With the research supporting the connection of phonological awareness to second language learning, Vellutino and Scanlon (1986) recommend administering a test of phoneme analysis to those poor readers to assess the nature of their reading disorder, which may predict future second language learning success. They state:

> It is clear, from the results in general, that basic deficiencies in phonologic processing constitute defining and rather pervasive characteristics of poor readers of the type we have been studying – that is, severely impaired readers who are apparently normal in other areas of cognitive development. Such deficiencies were especially apparent on the tests evaluating phoneme analysis as well as on the free recall test, the latter learning heavily on one's ability to store and retrieve phonetic descriptions of the nonsense syllables presented. (p.135)

The other important component that needs to be addressed in the diagnosis is auditory memory. As Service (1992) indicates, difficulties in non-lexical verbal short-term memory

tasks as well as less effective speech perception appear to impact the effectiveness of the phonological storing component of working memory. "Such a deficit thus seems related to both success in learning to read and learning a foreign language." (p.31).

Observation can also be a powerful mode of assessment. The eye of an experienced teacher or educational specialist can pick up the student's struggle and with the proper input understand the cause of that struggle. For example, Service (1992) provides an example of factors which influence long-term learning and recall of words. "Learning of new words depends on maintaining one or many representations of a word form and its meaning for some critical time in working memory to establish representations that can later be found associatively from long-term memory, influencing the long-term learning of words." (p.44)

Informal verbal questioning can also be a authentic way of assessing the needs of students in the classroom. "Research suggests that poor phonology is likely to be the most prevalent problem area. Asking the student to repeat FL words and noting the way s/he pronounces them is one informal diagnostic indicator. Asking the student to indicate the number of phonemes in a native language word."(Sparks & Ganschow, 1993a, p.69). The connection of poor phonology to delayed and difficult onset of English should give educators a warning sign to follow up with intervention.

**Recommended Interventions**

Research has identified connections between the first and second language learning disabilities and has specifically focused on phonological processing disorders and deficits in auditory memory. Thus, a multi-sensory approach is recommended to ensure a successful acquisition of a second language, with intensive phonetic instruction to build the fundamental

skills necessary for language learning as well as reading and writing. The Orton-Gillingham method emphasizes helping students "crack the language code via a structured, multisensory approach in which the students simultaneously hear, see and write sounds/symbols and are directly taught rules for word endings, word order, subject-verb agreement, and declensions. . . . Direct teaching of the sound and sound-symbol system of the FL significantly improves both the FL aptitude (on the MLAT) and the native language sound and sound-symbol performance of at-risk FL learners" (Sparks & Ganschow, 1993b; Sparks & Ganschow, 1995; Sparks, Ganschow, Artzer, & Patton, 1997; Sparks, Ganschow, Pohlman, Artzer, & Skinner, 1992, p.252). Vellutino and Scanlon (1986) support the direct instruction of phonology and syntax of the second language, especially for the students who struggle building structure and developing organization in linguistic coding.

Sparks and Ganschow (1993b) recommend three ways for students with phonological deficits to learn a second language. All three methodologies involve the direct and explicit teaching of phonology in an attempt to remedy the inefficiently functioning phonetic module. "The methods are: 1) teaching the phonology of the FL when the student begins FL instruction; 2) teaching phonology of the student's native language before FL instruction begins; or 3) making certain that students are taught (and learn) the phonology of their native language in the primary grades during reading instruction. " (p.295-6).

Along with direct instruction of phonological awareness and syntax, similarities between students' first and second languages should be explicitly explained to build connections. For example, Latin roots are used to form words in English and Spanish. These cognates can increase comprehension of written and spoken language. Helping students

transfer knowledge already established in their native language will enhance their success in developing skills in their second language. (Gutierrez-Clellen, 1999; Cummins, 1989)

## Summary

In the review of the literature, covering the effects of learning disabilities on the acquisition and learning of a second language, different components required for language learning to occur were addressed. The connection between first and second language learning disabilities, and how deficits in phonological processing and auditory memory prevent the successful and timely acquisition of a second language were evaluated. Also, the specific linguistic coding necessary to manipulate, store and utilize the phonemes was presented. In light of all these components factoring into the ease or difficulty in language learning, diagnostic assessment methods and interventions were recommended.

# Chapter Three: Methodology

## Purpose of the study

The purpose of this study was to analyze specific aspects which play a role in successfully learning English. The outcomes of this study have important implications in the education of the ever-increasing population of culturally and linguistically diverse students in today's schools. A dilemma occurs in determining whether a student's lack of progress is due to a language learning difficulty, or lack of exposure and instruction in the second language. The current and future research should focus on defining the causes for a student's speech and language delays and developing tools to assess linguistic deficits. Previous research has highlighted specific processing domains, such as auditory perceptual skills, phonological coding and storing, and verbal memory that can hinder the acquisition of language. The purpose of this study was to document particular areas of difficulty in the normal course of second language acquisition and development which may be indicative of specific processing deficits from the individual experiences of twenty-six bilingual subjects.

**Research statements driving this study are as follows:**

1. The young adults who score poorly on the phonological awareness test will report proportionally lower proficiencies in reading, both in their native language as well as English.

2. The young adults who score poorly on the phonological awareness test will report proportionally lower proficiencies in writing, both in their native language as well as English.
3. Proportionally lower proficiencies in the first language and in English will be reported in the active academic domains of reading and writing than the conversational skills of listening and speaking by those identified to have reduced phonemic awareness by the phonological awareness test.

## Research Procedures

### Population

The data collection guidelines and specific directions of subject selection were developed by the researcher in collaboration with a Linguistic course examining second language acquisition. The selection of subjects was completed using the following criteria.

1. The bilingual interviewee/subject spoke his/her native years for a minimum of three years before learning English.
2. The interviewee's age needed to be between eighteen years old and twenty-seven years of age.
3. The interviewee had to be willing and able to share reflections of his/her personal journey of language learning in English.
4. Verbal permission signifying willingness to voluntarily participate had to be given by interviewee, following the agreement provided by the researcher.

5. The interviewee had to agree to be audio taped and complete the following information: a questionnaire, a phonological awareness test, and a narrative interview for this confidential research study.

**Characteristics of the Sample**

The sample included the following ethnicities: African, Asian Pacific, Chinese, Filipino, Hispanic, Indian, Korean, Persian, Russian, Swiss-German and Vietnamese. The highest representation in the population was Latino, which was 48% of the total sample. These Latino subjects came from: Bolivia, Brazil, Chile, El Salvador, and Mexico.

**The Subjects' Background**

| | Range | Mean |
|---|---|---|
| Age | 18 to 27 years old | 21.3 years old |
| Duration of subject in the United States | 9 months to 25 years | 10.4 years |
| Duration of the subject's mother in the United States | 0 to 30 years | 9.7 years |
| Duration of the subject's father in the United States | 0 to 26 years | 10.3 years |
| Schooling in the first language | 0 to 13years | 6.3 years |
| Schooling in English | 9 months to 18 years | 8.5 years |

**Language Use**

| | At home | At work * | At school * |
|---|---|---|---|
| English | 11.5% | 78% | 81% |
| First Language | 85% | | 3.5% |
| Bilingual: English and First Language | 3.5% | 22% | 8% |

(* The percentages in the "At work" and "At school" columns do not equal one-hundred percent because not all subjects were currently in school and/or employed.)

Twenty-three out of the twenty-six subjects resided in their native country from two to twenty-two years. The three who resided in the United States since birth included two Latinos and one Vietnamese who only spoke their native languages at home until entering school.

**Instrumentation**

The instruments used to collect the data were designed, modified and chosen to fulfill the stated purpose of the study. They included three components of information: (1) a questionnaire; (2) a narrative interview; and (3) the results of the phonological awareness test (Rosner, 1975). To clarify procedures, an outline and direction sheet were designed to specifically direct the study and the manner in which the students were to select the interviewee and collect the pertinent information. To facilitate the collection of data, an hour-long oral presentation describing the procedure and purpose of the study was given by the researcher in the Spring of 1999. A review of the direction sheet, an explanation of the questionnaire and narrative interview, and a practice session of

administering the phonological awareness test by Rosner (1975) were included (See Appendix A for instruments used).

The direction sheet was developed to specifically outline the procedure and limitations of the selection of interviewees and suggest a preferred sequence of events to insure optimum comfortability of the interviewee and accurate data collection. The final version of the questionnaire was a modification of an original written by Langdon (1998). Permission to use the questionnaire was obtained from the author. The written questionnaire was used to give the researcher quantifiable information to compare variables such as: years in the United States, years of education, types of programs, usage of the second language and language learning difficulties.

The questionnaire consisted of four sections: (1) background; (2) schooling; (3) problems with native language/English; and (4) levels of self-reported proficiencies. Research studies have indicated that questions relative to native language grammar, spelling, writing, and reading are the best discriminators of students at risk for second language learning difficulties (Ganschow, et al., 1998). Another study indicated that a number of language-related questions are also important discriminators of at-risk students: ease of learning to read, spell, and learn phonics; ease of studying English; understanding what was read; and grades in reading and spelling. (Sparks, Ganschow, Kenneweg, & Miller, 1991).

In addition, a narrative interview was included in the study to collect qualitative data on the personal journey of each subject and to determine if any patterns emerge outside of the questionnaire. It was designed to allow the interviewee freedom to express

his/her personal language learning process in greater detail and to describe possible struggles or circumstances not included in the standard written questionnaire. The information gathered in the narrative interview provided qualitative information to elaborate on the varying skills and patterns of difficulty experienced by the bilingual subjects.

Finally, the Rosner Test of Auditory Analysis Skills, (Rosner, 1975), was used to give a standardized measure of the level of phonological awareness that each subject accomplished. This test was not altered or modified, and was administered by the student to the interviewee at the time of the interview.

**Procedure**

The data were gathered by using the previously stated methods. Quality assurance for the interviews and the administration of the phonological test were ensured by the accompanying audio tape recording of the interaction. The students had to interview a bilingual subject and collect the relevant information. This information included: (1) choosing a subject; (2) requesting their completion of a written questionnaire; (3) tape recording a narrative interview; and (4) administering of the phonological awareness screening test. The students were subsequently responsible for presenting their findings of the completed written survey, the tape recording of the interview and the results of the Rosner phonological awareness test.

The interviews were transcribed to identify patterns of difficulty in the individuals' process of acquiring English. The researcher used statistical analyses to compare the questionnaires in the area of self-reported proficiencies.

## Analysis of Data

The researcher conducted quantitative and qualitative analyses of the data collected. The narrative interviews were transcribed and the questionnaires were used to determine statistical significance between groups. All subjects were divided into two groups according to their performance score on the Rosner test of auditory analysis skills (1975). If they achieved a score of eleven or above they were placed in the high phonological awareness group. Those who scored ten and below were determined to have deficits in phonological processing, and placed in the low group. Chi-square tests and t-scores were used to assess the variance in distribution of the self-reported categories. Statistical significance between the means of the two presenting groups was used to determine if the differences between the high and low groups were statistically significant.

## Summary

The information included in this chapter described the population and the selected sample of individuals in this research study. A detailed explanation of the instruments, the procedure, the process of gathering data and analysis applied in compiling the pertinent information to reveal the results of this study were outlined.

# Chapter Four: Results and Discussion

## Introduction

The purpose of this study was to examine the effects of phonological awareness on the acquisition of a second language. The research previously reviewed suggested that learning disabilities contribute to difficulties in the individual's first language, impacting the acquisition of a second language as well as the literacy skills of that second language (Cummins, 1989; Ganschow, Sparks, Javorsky, et al., 1992; Moats & Lyon, 1996; Shaywitz, 1998). Strong linguistic processing skills which are necessary for successful second language acquisition and literacy learning include: auditory processing, auditory memory, phonological processing and manipulation, and linguistic coding. Deficits in these processing domains impact the development of reading and writing skills (Ganschow, et al., 1998; Langdon, 1989; Service 1992; Vellutino & Scanlon, 1986). The manipulation, storing, retaining and recalling of phonemes, referred to as phonological awareness is imperative to successful literacy development.

This study divided the sample population into high and low phonological awareness groups and analyzed self-reported proficiencies in their first and second language domains. Phonological awareness differences were predicted to correlate with differences in literacy skills. These correlations are paramount for understanding the literacy development of the growing populations of English language learners in today's schools. The administration and use of effective diagnostic tools for learning disorders and the increasing ability to differentiate between expected transitional time and the presence of a learning disability are crucial in the educational evaluation of struggling

second language learners. Educators need to be trained to assess true language proficiency and give adequate time for the second language to be acquired.

**Proficiency Results**

Table 1 lists the division of the population sample into high and low phonological awareness groups which was used to identify patterns in the self-reported proficiencies in the Speaking, Listening, Reading and Writing domains.

**Table 1: Phonological Scores of the Sample Population**

| | Number of subjects | Mean of group scores |
|---|---|---|
| **Low phonological Group** (received a score of 10 or below) | **10** | **7.7** |
| **High phonological Group** (received a score of 11 or higher) | **16** | **12.5** |

Note: The highest possible score on the phonological awareness test is 13.

Using the two groups as described above, the Chi-square values were derived by adding the differences between the expected levels of distribution and the actual levels of distribution. These values indicated whether or not the variances in distribution were statistically significant. The high chi-squared values indicated an increased level of confidence that the distributions did not occur by chance and that the differences were indeed significant. The chi-square test determines if the variation of distribution within the two groups was significant. Below are the t-test values with a brief description following each table.

**Table 2: Chi-squared Scores of Self-Reported Proficiencies**

| Chi-square testing | Chi-square Value (x2) | Chi-square Probability (%) | Chi-square Value (x2) | Chi-square Probability (%) |
|---|---|---|---|---|
| **Language** | Native Language | Native Language | Second Language | Second Language |
| **Speaking** | **0.65** | **72.3%** | **1.86** | **60.3%** |
| **Listening** | **4.93** | **8.5%** | **1.92** | **59.0%** |
| **Reading** | **6.00** | **11.2%** | **2.11** | **55.1%** |
| **Writing** | **7.93** | **4.8% **** | **7.82** | **5.0%**** |

(**Statistical significance was found to the .05 alpha level. Statistical significance was found to the .10 alpha level.)

Statistically significant variance was found in the distribution of self-reported proficiencies between the high and low groups in Writing, in the native language with a chi-value of 7.93 and in English with a chi-value of 7.82, and Listening, in the first language with a chi-value of 4.93. In the Writing domain, with the alpha level of .05, the null hypothesis was disproved and the variance of distribution in both languages was statistically significant supporting the hypothesis that phonological awareness difference was impacting the individuals' ability to write in both languages.

To identify general patterns throughout the sample, t-test scores were also applied to the data of the low and high groups in the four domains: Listening, Speaking, Reading and Writing. These scores indicated statistically significant discrepancies between the means of Reading and Writing in both languages, and Listening in the native language.

The t-test values were used to compare the means of each one of the groups, high and low, to identify patterns.

**Table 3: Native Language Speaking**

| t-Test: Two-Sample Assuming Unequal Variances | *High Group* | *Low Group* |
|---|---|---|
| **Mean** | **1.5** | **1.31** |
| Variance | 0.5 | 0.36 |
| Observations | 10 | 16 |
| Hypothesized Mean Difference | 0 | |
| df | 17 | |
| **t Stat** | **0.70** | |
| **P(T<=t) one-tail** | **0.25** | |
| **t Critical one-tail** | **1.74** | |

No significant difference between the means in the high and low groups was found in the native language speaking domain. The means differed .2 when comparing the self reported measures of speaking proficiency.

**Table 4: English Language Speaking**

| t-Test: Two-Sample Assuming Unequal Variances | *High Group* | *Low Group* |
|---|---|---|
| **Mean** | **2.1** | **2.13** |
| Variance | 0.98 | 1.05 |
| Observations | 10 | 16 |
| Hypothesized Mean Difference | 0 | |
| df | 20 | |
| **t Stat** | **-0.06** | |
| **P(T<=t) one-tail** | **0.48** | |
| **t Critical one-tail** | **1.72** | |

No significant difference between the means in the high and low group was found in the English language speaking domain.

**Table 5: Native Language Listening**

| t-Test: Two-Sample Assuming Unequal Variances | *High Group* | *Low Group* |
|---|---|---|
| **Mean** | **1.7** | **1.25** |
| Variance | 0.46 | 0.33 |
| Observations | 10 | 16 |
| Hypothesized Mean Difference | 0 | |
| df | 17 | |
| **t Stat** | **1.75** | |
| **P(T<=t) one-tail** | **0.05** | |
| **t Critical one-tail** | **1.74** | |

The t-test value of 1.75 was higher than the t-Critical value indicating that the differences between the two means was statistically significant and did not occur by chance to the .05 alpha level.

**Table 6: English Language Listening**

| t-Test: Two-Sample Assuming Unequal Variances | *High Group* | *Low Group* |
|---|---|---|
| **Mean** | **2.1** | **1.75** |
| Variance | 0.98 | 0.6 |
| Observations | 10 | 16 |
| Hypothesized Mean Difference | 0 | |
| df | 16 | |
| **t Stat** | **0.95** | |
| **P(T<=t) one-tail** | **0.18** | |
| **t Critical one-tail** | **1.75** | |

The t-test value of .95 lower than the t-Critical value indicating that the differences between the two means was not statistically significant.

**Table 7: Native Language Reading**

| t-Test: Two-Sample Assuming Unequal Variances | *High Group* | *Low Group* |
|---|---|---|
| **Mean** | **3.1** | **2.063** |
| Variance | 1.66 | 2.20 |
| Observations | 10 | 16 |
| Hypothesized Mean Difference | 0 | |
| df | 21 | |
| **t Stat** | **1.89** | |
| **P(T<=t) one-tail** | **0.04** | |
| **t Critical one-tail** | **1.72** | |

The t-test value of 1.89 was higher than the t-Critical value of 1.72 indicating that the differences between the two means was statistically significant and did not occur by chance to the alpha level of .04.

**Table 8: English Language Reading**

| t-Test: Two-Sample Assuming Unequal Variances | *High Group* | *Low Group* |
|---|---|---|
| **Mean** | **2.6** | **1.875** |
| Variance | 1.82 | 1.05 |
| Observations | 10 | 16 |
| Hypothesized Mean Difference | 0 | |
| df | 15 | |
| **t Stat** | **1.46** | |
| **P(T<=t) one-tail** | **0.083** | |
| **t Critical one-tail** | **1.75** | |

The t-test value of 1.46 lower than the t-Critical value of 1.75 indicating that the differences between the two means was not statistically significant.

**Table 9: Native Language Writing**

| t-Test: Two-Sample Assuming Unequal Variances | *High Group* | *Low Group* |
|---|---|---|
| **Mean** | **3.8** | **2.5** |
| Variance | 1.07 | 2.53 |
| Observations | 10 | 16 |
| Hypothesized Mean Difference | 0 | |
| df | 24 | |
| **t Stat** | **2.53** | |
| **P(T<=t) one-tail** | **0.01** | |
| **t Critical one-tail** | **1.71** | |

The t-test value of 2.53 was higher than the t-Critical value of 1.71 indicating that the differences between the two means was statistically significant and did not occur by chance to the alpha level of .01.

**Table 10: English Language Writing**

| t-Test: Two-Sample Assuming Unequal Variances | *High Group* | *Low Group* |
|---|---|---|
| **Mean** | **3.4** | **2.06** |
| Variance | 1.16 | 1.26 |
| Observations | 10 | 16 |
| Hypothesized Mean Difference | 0 | |
| df | 20 | |
| **t Stat** | **3.03** | |
| **P(T<=t) one-tail** | **0.003** | |
| **t Critical one-tail** | **1.72** | |

The t-test value of 3.03 was higher than the t-Critical value of 1.72 indicating that the differences between the two means was statistically significant and did not occur by chance to the alpha level of .003.

**Proficiency Discussion**

The statistical analysis as it relates to the research questions posed was addressed separately for each specific hypothesis. The first research hypothesis which was examined predicted that those subjects who score poorly on the phonological awareness test would report proportionally lower proficiencies in reading, both in their native language as well as English. From the data interpretation, the t-test in the Reading domain of the native language is significant. However, there was no significant discrepancy in the English Reading domain as anticipated. In fact, in the analysis of the narrative interviews which accompanied the questionnaires, four individuals in the low group personally recalled the struggle they had in learning to read in their first language. Interestingly, 80% of the subjects in the low group received more English language instruction compared to only 44% in the high group. Even with the direct English instruction, the chi-square value indicated no statistical difference in the distribution of the reading proficiency levels. Some of the subjects, 20% in the low group and 25% in the high group, received English instruction in their native country primarily through the mode of reading. Thus, initial instruction and exposure which came from reading in English may explain why the subjects perceived that their performance in English reading was higher.

There was a clear distinction between the individuals who demonstrated difficulty on the phonological awareness test and those who did not in examining the self-reported proficiency levels in the writing domain. The research hypothesis stated that the subjects who scored poorly on the phonological awareness test would report proportionally lower

proficiencies in writing, both in their native language as well as English. Statistical significance in the distribution of variance, as measured by the chi-squared test, supported that the variance was impacted by the phonological ability to the 95% level of confidence or 5.0% chi-squared probability. The proficiency scores applied to the t-tests showed a significant difference in the means of the two groups to the .01 alpha level. Written skills demand output from the linguistic processing domains as well as written mechanics and syntax of the English language. Writing is truly the coronation of all the literacy skills, making it the most difficult and taxing academic skill to learn. One half of the interviewees across both groups mentioned difficulty understanding the syntactical structure of English and wished they had received direct instruction to increase their understanding. The written domain was the strongest indicator of the connection between the deficits noted in the first and second languages, and demonstrated that phonological awareness is an important predictor of successful second language acquisition.

The third and final research question posed stated that proportionally lower proficiencies in both languages would be reported in the active academic domains of reading and writing than the conversational skills of listening and speaking by those identified to have reduced phonemic awareness as measured by the phonological awareness test. This question was partially answered by the findings previously mentioned in discussing the significance between reading and writing skills. The other aspect of this question that needed to be addressed is the primary development of conversational skills before literacy skills. Cummins (1984) purports that the BICS level

of second language proficiency develops before the CALPS level. The current findings seemed to indicate that proficient levels of speaking and listening were less difficult to acquire than the higher order skills of literacy, which was shown to be more difficult for those with phonological deficits. The lack of statistical significance in the speaking domains and English listening support that there is insufficient variance in the distribution and diminutive difference between the means of the two groups.

**Narrative Interview Discussion**

The narrative interviews were also examined for reoccurring patterns within the low and high phonological awareness groups to give the research study a human voice and emphasize the individual nature of this process. The patterns have been woven into the previous discussion, but further analysis will be made. When listening to the narrative interviews of the whole sample population, it became apparent that those subjects falling in the high phonological group gave lengthier responses successfully employing more complex sentence structures. The high group also used more advanced levels of vocabulary in their responses than the low group. In the Speaking domain, four individuals in the high group mentioned struggling with their accent and overcoming how their accent impacted their pronunciation implying an advanced level of sound manipulation and awareness. In the low group, three subjects shared difficulties with code switching between two languages, indicating insufficient knowledge of the second language. Interestingly, approximately one-third of the whole sample population mentioned learning English by watching television.

The narrative interviews included a question about motivation in learning English as a second language. An overwhelming number of subjects, 20 out of 26 or 77%, claimed that their motivation to learn English was to communicate with people. Furthermore, in the low group, 7 out of 10 or 70%, stated that the second highest motivator to acquire English was to get a good job in the United States. These comments were consistent throughout the interviews indicating that second language learners know the importance and necessity of learning English when residing in the United States.

**Advantages and Disadvantages of the Product**

The combination of quantitative and qualitative data analyses enables the research study to capture the individualistic nature of this process. This combination traces the patterns and tendencies which can increase awareness of the acquisitional language process. Obtaining the background information is crucial because it provides the researcher with the relevant information of the components that impact the individual process and offers possible explanations for the variations. The narrative interview addressed the unique and particular journey each person experienced in learning a second language.

However, in further studies, the researcher would exclude the use of the school-task difficulties section if redeveloping the questionnaire. This section did not provide significant patterns nor statistical significance in the quantitative analyses, appearing to be difficult for the individuals to assess their performance ability on specific tasks. Responses from the subjects seemed to indicate a general lack of awareness of the specific activities that are impacted by a reduced level of language proficiency. Overall

language proficiencies in reading, writing, speaking and listening, clearly presented a more reliable measure for detecting patterns related to phonological awareness ability.

The use of a standardized reading and writing protocol would have provided an objective measure of achievement levels. Though the self-reported questionnaire appeared to be helpful in answering the questions posed by this study, a standardized measure could be added to the collection of data to increase the reliability of the patterns found between the two groups.

**Discussion of implications**

The potential implementation of the findings from this research study is a greater understanding of the connection between first and second language acquisition, and the cross-linguistic carry over of presenting learning disabilities. This study contributes further support to the growing literature which analyzes the components necessary for successful language learning, and the processing skills employed during language acquisition. It is the researcher's hope that educators will increase their awareness of the appropriate transitional time that is necessary for a student to acquire a CALP level of English proficiency, which is imperative for academic success in the school environment.

With greater understanding and awareness of the process, more appropriate and effective diagnostic tools can be developed to more accurately and efficiently identify the presence of a learning disorder. Furthermore, well trained educators who understand second language learning and the symptoms associated with deficits in the linguistic processing skills need to implement these diagnostic tools in the field. Educational specialists, school counselors, classroom teachers, special educators and, last but not

least, speech-language pathologists, whose area of expertise is language development, need to develop an understanding of how to directly address the increasing population of linguistically diverse students in today's schools who have historically been misdiagnosed, misinterpreted and misunderstood.

**Suggested Possibilities for Further Research**

Lastly, possible studies to follow the findings of this study and other research reviewed could investigate various methods of direct teaching of phonological awareness and determine if this type of remediation increases successful acquisition. In research investigating the effectiveness of direct teaching, methodologies of how the instruction is delivered must be noted to assess if phonemic awareness is taught in isolation or embedded in the curriculum. The mode of instruction delivery is an impacting factor of utmost importance.

Additional research should examine the effectiveness of various phonological awareness tests that could be used as a diagnostic tool predicting successful second language acquisition. Finally, more research is needed to document the progress of linguistic diverse populations which are transitioning to English using proven standardized measures in the reading, writing and phonological processing domains. These diagnostic tools should be provided in the students' native language, along with carefully constructed English tests that have been proven to be culturally sensitive.

# Chapter Five: Summary

## Overview

Considering the present demographic situation in the classroom, all educators must increase their awareness of the process of second language acquisition and the components which can hinder English language learning. Classrooms in California are currently educating students from a multitude of ethnic backgrounds and English language proficiencies. Since this diversity is not the minority but the growing majority, research in this field must be considered and explored to increase awareness and to provide a more effective education for the linguistically diverse students. With a greater understanding of the linguistic process involved in developing an academic level of English, educators can better determine when a child is at risk of a learning disability causing difficulties in second language learning, or when time is still needed for language skills to develop. Clinicians and special educators diagnosing students will then grasp the importance of investigating the student's background, native language skills, and phonemic awareness to determine the presence of possible language learning disabilities that could negatively impact the child's transition to English. Finally, new and more effective diagnostic tools can be devised to consider the authentic potential of the student, stemming from the increased knowledge of the specific processing domains involved in the acquisitional process.

The focus of this study was to look at the individual journeys of twenty-six individuals and investigate the impact of low phonemic awareness on second language learning. Research previously reviewed stated that linguistic-based learning difficulties

in one's native language carry over to preceding languages learned (Ganschow, et al., 1998; Sparks & Ganschow, 1993a; Langdon, 1996). Therefore, difficulties in the academic domains of reading and writing in the first language are indicative of potential deficits in learning to read and write in a second language. This connection also impacts the development of higher order thinking and expression skills in a second language, referred to as a CALP level of proficiency (Cummins, 1989).

## Conclusions

The results of this study speak to the importance of phonological awareness being a key processing domain in the development of second language skills including reading and writing. The strongest indicator of the deficiencies in phonemic processing impacting language development was found in the writing domain. Statistical significance was found in first and second languages in the writing domain, the highest order literacy skill, clearly supporting the difference in writing proficiency between those in the low and high phonological awareness groups. This area was mentioned most frequently in the narrative interviews as being the most difficult domain to master. Reduced reading proficiencies in the first language were reported by the low phonological awareness group. The difference between the means in reading in both languages was found to be statistically significant. This supports the hypothetical question that low phonological processing would impact reading skills in both languages, but was not as strong an indicator of second language learning as self-reported writing proficiencies. Hence the strongest indicator was found to be the most advanced literacy skill of writing. In the development of literacy skills a child can read what they can not

write, but the inverse is not true. The findings in the reading and writing domains support the hypothesis that deficits in phonological processing skills will negatively impact the development of higher level literacy skills.

In the conversational level of proficiency (BICS), enlisting the listening and speaking domains, only native language listening was found to have a significant discrepancy between the groups' means. Interestingly, listening enlists the auditory processing domains mentioned as impacting second language learning. Auditory processing, phonological awareness, verbal memory, and linguistic coding are crucial to language learning and language use. These linguistic processing skills are critical to the ability to manipulate, organize and recall new phonemes as required in foreign language learning. Surprisingly, this same significant discrepancy in perceived listening skills was not reported in English. This is possibly accounted for by first language loss that occurs when the second language is being learned and used more frequently than the first language. As far as measuring the two groups in the speaking domain, no significance was found in either the distribution of variance or the difference between the two groups' means, but noteworthy patterns were found in the interviews. When mentioning various struggles learning English, the high phonological awareness group commented that the presence of an accent created pronunciation difficulties, while the low group indicated the presence of code switching, indicating a lower proficiency in retrieval and knowledge of the English vocabulary. The presence of standardized measures to assess proficiencies in English might have proven beneficial in standardizing the differences in proficiencies. However, the self-reported proficiency levels were shown to statistically support

significant differences between the high and low groups in the academic domains of reading and writing as well as native language listening. The findings substantially support the importance of phonological awareness and its powerful impact on second language learning.

**Future Implications**

The hope of the researcher is that this study will not only increase the awareness of the transitional process of second language learning, but will emphasize the significant role of phonological awareness to this process. Further research can investigate various intervention programs targeting children with low phonological awareness to examine if direct instruction of sound manipulation and sound structure in the English language would increase language learning for ELL students. Another area of concern is updating the various diagnostic tools to determine phonological awareness in the students' first language as well as English. A writing test in the students' two languages, when appropriate, should be included in educational evaluations to assess native language proficiency, giving educators a window into the student's potential and educational foundation that he/she brings to the second language learning process. The hope of this research is that educators will become more aware of how specific processing deficits affect the language learning process of individuals' developing English language skills.

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# Appendix A

**Questionnaire & Survey for 102 students**
**Dr. Henriette W. Langdon**
**Written Portion of Assignment Due 5/11/99**
**Individual Oral Presentations given 5/11/99 and 5/18/99**

**Purpose Statement**: The purpose for gathering this information is to look at patterns in the process of acquiring a second language. There is emergent literature looking at this very important issue of how individual learning strengths and weaknesses effect this process.

**Directions:**

1. Select a bilingual interviewee (native language & English). The person can be either male or female, but his/her age must be between 18-27. Ideally, choose someone who you have established a relationship with to promote honesty about possible struggles he/she has had while learning a second language. Read verbal permission statement to potential interviewee to attain permission before preceding.
2. Find a time when he/she would be willing to answer the questionnaire and go through the interview with you. Try to make this convenient for the interviewee, since he/she is giving of his/her time and sharing his/her experience with us.
3. It is not necessary for you to be present when the interviewee is filling out the questionnaire if time or circumstances do not allow for both. You can give the questionnaire to the interviewee, and the interviewee can bring the questionnaire to you at the time of the interview. Please make sure all the information is filled out correctly. This might mean that you read the questionnaire and do the survey orally if the person does not read and write in English.
4. The second part is the narrative survey or interview. The questions are provided. Make sure that the recording is adequate that one can hear what is being said. It is recommended to do a test run for a minute and go back to see if the tape recorded your voices adequately. After you are done, thank the interviewee for his/her time and assure him/her that his/her identity will be keep confidential and the purpose of gathering this information is to further understand how people acquire a second language, specifically English.

## The learning a second language questionnaire
(completed by interviewee)

**Background:**

Date of birth:_____ Age:_____
Ethnicity:_____
Language of preference: _____

How long has the family been residing in the U.S.?
Interviewee: _____ Mother: _____
Father: _____ Other family members (name relation) _____

Language preference at home _____, at work_____, and at school_____.

Has the interviewee resided in the country where the other language is spoken?
Where? _____ When? _____
How long? _____
Where? _____ When? _____
How long? _____

**Schooling:**

Amount of schooling in first/native language?
Number of years _____ Age _____
Location _____

First year attending school in the U.S.? _____
Years of formal education in U.S.? _____

Type of program Bilingual_____ Which grades? _____
English only_____ Which grades? _____
ESL _____ Which grades? _____
Formal education in U.S. was continuous _____interrupted_____
If interrupted, please explain: _____

(Conti.)

**Any Problems with Native Language:**

| | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|
| Listening to a teacher | 1 | 2 | 3 | 4 |
| Remembering what is taught | 1 | 2 | 3 | 4 |
| Following directions | 1 | 2 | 3 | 4 |
| Finishing homework | 1 | 2 | 3 | 4 |
| Participating in the activities | 1 | 2 | 3 | 4 |
| Learning to read | 1 | 2 | 3 | 4 |
| Learning math | 1 | 2 | 3 | 4 |
| Writing | 1 | 2 | 3 | 4 |

If answered yes, do you have an idea why this area was difficult for you?

_____

_____

**Any Problems with English:**

| | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|
| Listening to a teacher | 1 | 2 | 3 | 4 |
| Remembering what is taught | 1 | 2 | 3 | 4 |
| Following directions | 1 | 2 | 3 | 4 |
| Finishing homework | 1 | 2 | 3 | 4 |
| Participating in the activities | 1 | 2 | 3 | 4 |
| Learning to read | 1 | 2 | 3 | 4 |
| Learning math | 1 | 2 | 3 | 4 |
| Writing | 1 | 2 | 3 | 4 |

If answered yes, do you have an idea why this area was difficult for you?

_____

_____

**Has a level of proficiency been developed in**: rate proficiency on a scale of 1-5
(1 = very above average, 2 = above average, 3 = average, 4 = below average, 5 = very below average)

| First Language | | English | |
|---|---|---|---|
| Reading | _____ | Reading | _____ |
| Writing | _____ | Writing | _____ |
| Listening | _____ | Listening | _____ |
| Speaking | _____ | Speaking | _____ |

Thank you for participating in our study!!!

## Narrative Interview: (to be recorded onto cassette)

1. Can you please share with me how you learned English?

2. What part of this learning process was most difficult for you?

3. What is most rewarding to you about having the ability to speak two languages?

4. Were you motivated to learn English? Please describe any attitudes or feelings you had during the process of learning English.

5. Was there any area that was more difficult to acquire? (For example, it was easier to learn to read than to listen or speak, or easier to listen than read or write) Why do you think this was the case?

## ROSNER TEST OF AUDITORY ANALYSIS SKILLS (TAAS)

Name:_____ Date:_____

Examiner:_____

**Directions:**
Make sure the learner understands the task. Use the two practice words. If necessary use several more compound words like *carwash, airplane*, etc. Be sure to say each example exactly as it's written. Always pronounce the word, have the learner repeat it, then say it again minus the syllable or sound. When dealing with individual letters to be deleted, always give the sound of the letter, not its name.

| | | |
|---|---|---|
| A Say cowboy | Now say it again, but don't say boy | cow |
| B Say steamboat | Now say it again, but don't say steam | boat |
| 1 Say sunshine | Now say it again, but don't say shine | sun |
| 2 Say picnic | Now say it again, but don't say pic | nic |
| 3 Say cucumber | Now say it again, but don't say cu (q) | cumber |
| 4 Say coat | Now say it again, but don't say /k/ (the k sound) | oat |
| 5 Say meat | Now say it again, but don't say /m/ (the m sound) | eat |
| 6 Say take | Now say it again, but don't say /t/ (the t sound) | ache |
| 7 Say game | Now say it again, but don't say /m/ | gay |
| 8 Say wrote | Now say it again, but don't say /t/ | row |
| 9 Say please | Now say it again, but don't say /z/ | plea |
| 10 Say clap | Now say it again, but don't say /k/ | lap |
| 11 Say play | Now say it again, but don't say /p/ | lay |
| 12 Say stale | Now say it again, but don't say /t/ | sale |
| 13 Say smack | Now say it again, but don't say /m/ | sack |

TOTAL CORRECT: _____

GRADE SCORE:_____

| TAAS SCORE | EXPECTED FOR CHILDREN IN: |
|---|---|
| 1 | Kindergarten |
| 2 | Kindergarten |
| 3 | Kindergarten |
| 4 | Grade 1 |
| 5 | Grade 1 |
| 6 | Grade 1 |
| 7 | Grade 1 |
| 8 | Grade 1 |
| 9 | Grade 1 |
| 10 | Grade 2 |
| 11 | Grade 2 |
| 12 | Grade 3 |
| 13 | Grade 3 |